

# REINFORCED PLASTICS COMPOSITES MACT STANDARDS



Air Toxics Workshop  
December 2006

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# What we are covering

- Rule information resources
- Rule Changes
- Rule applicability
- Covered operations
- Important dates
- New or existing source determination
- General rule requirements
- Initial compliance demonstration
- Frequently asked questions

# Rule information resources

- Rule web page is <http://www.epa.gov/ttn/atw/rpc/rpcpg.html>
- Rule text and implementation materials are available on the website
- Implementation materials are added as they are developed
- [shedd.steve@epa.gov](mailto:shedd.steve@epa.gov) for questions relating to rule development

# Rule changes

- Added the following operations to the list of operations with no requirements
  - Polymer casting
  - RTM
  - Application of putties or polyputties
- Clarified that an existing area source that becomes major is still an existing source
- Clarified that facilities could use permit limits to demonstrate they are below 100 tpy threshold

# Rule changes

- Revised the emissions standards section to clarify when the 95 percent control requirement applies
- Modified Table 3
  - Corrected round-off errors
  - Removed column of highest organic HAP contents
  - Revised footnote on manually applied gel coat
  - Revised footnote defining large pultruded parts (1000 reinforcement or glass weight)
- Removed the manual gel coat emission factor equation from Table 1

# Rule changes

- Rewrote options for meeting open molding and centrifugal casting standards
  - Removed the term “compliant materials”
  - Allow some individual materials, as applied, to be compliant, while others are averaged.
- Require facilities using the same resins for all operation compliance option to use nonatomized mechanical resin application
- Pultrusion compliance options
  - Modified direct die injection and preform injection requirements
  - Clarified that averaging is allowed

# Rule changes

- Clarified compliance and reporting requirements
- Revised four definitions
  - High performance gel coat
  - Mixing
  - Neat resin plus
  - Polymer casting
- Corrected any typos or referencing errors that we found

# Outstanding Issues

- The nonatomized mechanical resin application equation in Table 1 reportedly underestimates emissions if highly filled resins are used
- There is no averaging period for pultrusion averaging
- We are waiting for more industry information on the emission factor issue before deciding if a rule amendment is required

# Applicability

This rule applies to facilities which:

- Manufacture reinforced plastics composites, and
- Have your facility at a major source (10 tpy of any one HAP or 25 tpy of any combination of HAP), and
- Use thermoset resins or gel coats, and
- The resins or gel coats contain styrene

# Applicability

The rule does not apply to facilities which:

- Use less than 1.2 tpy of styrene containing resins and gel coats, or
- Only perform research and development, or
- Only repair reinforced plastic composites, or
- Are an area or synthetic minor source

# Covered Operations with Requirements

- Open Molding
- Compression/injection Molding
- Centrifugal Casting
- Continuous Lamination/Casting
- SMC/BMC Manufacturing
- Pultrusion
- Mixing
- Storage
- Equipment Cleaning

# Covered operation with no requirements

- Polymer Casting
- Resin Transfer Molding (RTM)
- Application of mold sealing and release agents, putties, or polyputties
- Mold stripping and cleaning
- Repair unrelated to your manufacturing operations
- Materials that do not contain resin or gel coat
- Personal activities not part of manufacturing operations
- Prepreg materials
- Non-gel coat surface coatings
- Research and development operations

# Important dates

- The final rule was published on April 21, 2003, the amendment was published on August 25, 2005
- Existing major sources must still comply by April 21, 2006
- Operating new major sources should have complied by April 21, 2003, or startup, whichever was later
- New major sources under construction must comply at startup

# New Source

- You commenced construction after August 2, 2001, and
- When you commenced construction, there were no reinforced plastic composites operations at the facility
- The definition above would include moving an existing facility

# Existing Source

- Any source that is not new
- Existing sources are not considered new as a result of reconstruction

# Overview of Controls

Most operations at existing sources must:

- Use low HAP resins and gel coats
- Use nonatomized application techniques
- Cover open containers, mixers, resin baths

# Overview of Controls

- New sources with HAP emissions below the 100 tpy threshold meet the same limits as existing sources
- New sources at or above the 100 tpy threshold must control the operations below by 95 percent
  - Open Molding
  - Centrifugal Casting
  - Continuous Lamination/Casting
  - Pultrusion
  - SMC/BMC Manufacturing
  - Mixing

# Work Practice Standards

- Equipment Cleaning - Cleaning materials may contain no HAP (except for closed systems, and cleaning cured resin from application equipment)
- Resin Storage - Cover storage containers
- Resin Mixing and BMC Manufacturing - Cover the mixers, keep vents closed during mixing

# Initial Compliance Demonstration

- Emission limits - perform emission factor calculations as specified in the rule
- Work practice standards - submit a certified statement that the work practice is being performed
- Equipment standards - submit a certified statement that the equipment is in place and meet the requirements specified in the rule

# Calculating Emission Factors

- Equations are presented in Table 1 of the rule. Table 1 equations may be used in lieu of site specific factors
- Gel coat use may be based on purchase records
- Gel coat HAP content may be based on MSDS or resin specification sheets
- If averaging, you must determine the amounts of gel coat used for each specific operation

# Example Emissions Factor Calculation

- Open molding – atomized clear gel coat application
  - Gel Coat HAP content (from MSDS) is 42 percent (36 percent styrene and 6 percent MMA)
  - Emission factor equation from rule is
    - $EF = ((1.03646)(\%HAP) - 0.195) \times 2000$
    - $EF = ((1.03646)(0.36) - 0.195) \times 2000$
    - $EF = 481$
  - Emission Limit is = 522 lb/ton
  - This gel coat, as applied, would be considered compliant
- Do not consider catalysts or promoters
- Do consider any additional monomer addition

# Frequently Asked Questions

- If I use more than 1.2 tpy of resin and gel coat (combined) am I subject to the rule?
  - No, you must be a major source of HAP (i.e. area sources are not covered)
- If my emissions are less than 100 tpy am I exempt?
  - Not if you are a major source and meet the other applicability criteria

# Frequently Asked Questions

- Should I use the open molding emission factor equations in Table 1 to calculate polymer casting emissions?
  - No, we recommend 1-3 percent of available HAP unless you have site specific data
- What resin HAP content, hours of operation, and parts do I use to calculate PTE?
  - Generally you have to do a reasonable worst case analysis, but not make assumptions that would result in an impossible scenario

# Frequently Asked Questions

- Should I use the UEF equation for MMA?
  - Not for purposes of complying with this rule. If you have a gel coat with 30 percent styrene, and 5 percent MMA, then the input to the equation in Table 1 is 0.35 (30 percent plus 5 percent, expressed as a decimal). This would include calculations to determine if you are above or below the 100 tpy threshold

# Frequently Asked Questions

- Should I use the UEF equation for MMA when reporting emissions?
  - You should use the most accurate method available for reporting emissions for Title V purposes
- Can site specific factors be used in lieu of Table 1 factors for gel coat.
  - Yes, if they are supported by actual facility emissions test data, but their use is not required

# Frequently Asked Questions

- If I move do I become a new source?
  - Yes, if the new location does not already have reinforced plastic composites operations.
- If I am an open molder below the 100 tpy emission level and move (becoming a new source), and several years after the move my emissions increase above 100 tpy, do the 95 percent capture and control requirements apply?
  - Yes

# Frequently Asked Questions

- How do I know if my materials are resins, and/or thermoset resins?
  - We do not define “resin” and “thermoset resin” in the rule. If you have questions on your materials, ask the materials supplier.
- I use a putty-like filler, is this covered?
  - No.
- If my resins contain no styrene am I covered by the NESHAP?
  - No, unless you use styrene containing gel coats.

# Frequently Asked Questions

- What if I manually apply gel coat?
  - If you manually apply only, or you use manual and atomized spray application, treat the gel coat as if it were applied using atomized spray
  - If you use only manual gel coat and nonatomized gel coat application, treat as if you apply all manual gel coat using nonatomized spray
  - If you do manual, atomized, and nonatomized gel coat application, treatment will vary
  - We removed the equation for manual gel coat in Table 1
  - Use the most accurate method available for purposes of semi-annual emissions reporting

# Frequently Asked Questions

- If I build a new building next to my current building, does the new building become a new source?
  - The best source to answer these questions is your permitting authority because the decision may rest on site specific factors.
- My gel coat contains alpha-methyl styrene. Should the percentage of this chemical be added to the styrene content?
  - No, alpha-methyl styrene is not a HAP.

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# Other Questions?